

International Launch Vehicle Selection for Interplanetary Travel

Kristine Ferrone, Loi T. Nguyen

Abstract:

In developing a mission strategy for interplanetary travel, the first step is to consider launch capabilities which provide the basis for fundamental parameters of the mission. This investigation focuses on the numerous launch vehicles of various characteristics available and in development internationally with respect to upmass, launch site, payload shroud size, fuel type, cost, and launch frequency.

This presentation will describe launch vehicles available and in development worldwide, then carefully detail a selection process for choosing appropriate vehicles for interplanetary missions focusing on international collaboration, risk management, and minimization of cost. The vehicles that fit the established criteria will be discussed in detail with emphasis on the specifications and limitations related to interplanetary travel. The final menu of options will include recommendations for overall mission design and strategy.